

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, DC. 20554**

<b>In the Matter of</b>	)	
	)	
<b>Amendment of Part 15 regarding</b>	)	<b>ET Docket No. 04-37</b>
<b>New Requirements and</b>	)	
<b>Measurement Guidelines for Access</b>	)	
<b>Broadband over Power Line</b>	)	
<b>Systems</b>	)	

**June 21, 2004**

**To: The Commission**

**Reply Comments of David V. Hallidy**

I thank the Commission for the opportunity to file these Reply Comments in the matter of NPRM 04-37.

As a point of reference, I have been employed in the field of RF and Microwave engineering, including EMC (Electromagnetic Compatibility), as both technician and design engineer for 35 years and have held an Amateur Radio license for 38 years.

These reply comments are directed at comments made by UPLC, PowerWAN, Ambient, Current Technologies, the PLCA and other proponents of BPL.

Statements have been made by proponents of BPL to the effect that (and quoting UPLC) "there have been virtually no reported instances of interference, and any interference that has occurred has been corrected quickly and easily, using some of the mitigation techniques recommended by the FCC in this very proceeding"<sup>1</sup>.

My own experience with BPL has been very different, and has been documented in filings of complaints to the BPL provider and to the FCC.

On three separate occasions, I had the opportunity to visit the city of Penn Yan, NY, which is the site of a BPL trial being conducted by Data Ventures Inc of Largo, FL and using the MV (Medium Voltage) lines of the municipal power utility of the city of Penn Yan. The BPL equipment is provided for this trial by Amperion. I have found statements to the effect that BPL does not generate interference to HF communications services to be patently false. On each occasion, I encountered severe interference to my mobile HF operations, detailed below.

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<sup>1</sup> Comments of UPLC, pg 3.

In addition, my formal complaints to the FCC about this interference (and the formal complaints of others who suffered from the same interference on other occasions) have not been addressed by the FCC (also detailed in this comment).

#### **DETAILS OF FIRST VISIT- MARCH 27, 2004**

My first visit was on March 27, 2004 and resulted in the discovery of severe interference to my mobile amateur station, as indicated in my first complaint filed with the FCC on March 28, 2004 and copied here:

My name is David Hallidy

My address is: 1027 Rousseau Drive, Webster, NY 14580

My telephone number (day or night) is: (585) 872-0942

With this email, I am registering an official complaint of interference to the operation of my mobile Amateur Radio Station. My FCC-issued callsign is: K2DH, Amateur Extra Class.

On March 27, 2004 I was travelling through the city of Penn Yan, New York and attempting to operate on frequencies in the 15 and 10 meter Amateur bands. I encountered very high levels of noise on both those bands, and upon further investigation, also on the Amateur 17 and 12 meter bands. The levels of interference I observed were, at times, as strong, or stronger than an S9 level as indicated on the Signal Strength Meter in my Yaesu model FT-100D transceiver. At this level, the stations I was attempting to contact were essentially unreadable, even though they were at times as strong as S9 (which corresponds to a level greater than 50dB above the noise floor).

The character of the noise is interesting, in that it isn't confined to a particular frequency or group of frequencies, but instead, occupies the entire spectrum from somewhere below 18Mhz to greater than 30MHz. I found this while tuning the receiver trying to pinpoint the source of the interference. The noise seems to consist of a series of closely-spaced tones or carriers, with intermittent bursts of digital modulation on them. After some investigation, I concluded that the noise was emanating from the overhead power lines in one part of the city. My conclusion, after further discussion of this with other Amateurs, is that this interference was caused by the Amperion Broadband over Power Lines (BPL) system installed in part of the city of Penn Yan. I could not use the 17, 15, 12, or 10 meter ham bands until I was at least 3/4 mile away from the strongest point of the interference, which by my measurements is on Liberty Street in Penn Yan.

I would like to discuss this interference with you, so that the problem may be resolved and the interference stopped before it causes shutdown of a vital communications service in Penn Yan, putting life and/or property at possible risk.

I can be reached at the telephone number indicated at the top of this email, by email, or by regular postal mail at the above indicated address.

Thank you for your immediate attention to this matter.

Sincerely,  
David V. Hallidy  
FCC-issued callsign: K2DH  
email address: k2dh@frontiernet.net

Note: this complaint was filed using the procedures outlined on the FCC's website for filing complaints of interference to an amateur station.

The FCC's "Customer Service Standards" stated that I would receive a reply to my complaint within two (2) days and a full response within twenty (20) days.  
On March 30, 2004 I received the following email from the FCC:

You are receiving this email in response to your inquiry to the FCC on 3/30/2004 2:53:40 PM.

Reports of violations within the Amateur (Ham) Radio Service may be made

by email at: fccham@fcc.gov

Or, in writing, and mailed to:

Federal Communications Commission  
Enforcement Bureau  
ATTN: Amateur Radio Complaints  
1270 Fairfield Road  
Gettysburg, PA 17325

This includes that from BPL

Representative Number : TSR41

On April 2, 2004 I received a telephone call from the FCC's Experimental Licensing Branch asking for more details of my complaint and asking if I was sure I had the name of the provider and equipment manufacturer (Amperion) correct. I assured him I did, and he then stated that since they did not have an experimental license for the trial, he was turning the issue over to the Enforcement Branch.

On May 6, 2004, after receiving no word of any action having been taken on my complaint, I sent the following email to James Burtle, head of the FCC's Office of Engineering and Technology (OET):

Dear Mr. Burtle-

On Sunday, March 28, 2004 I lodged a formal complaint of interference I experienced to my Amateur Radio station while I was mobile in Penn Yan, NY on March 27. I have to date received no response from the FCC with regard to this complaint. Can you please advise me of the status of my complaint?

I have attached herewith a copy of the email complaint I sent to you and other FCC officials on March 29, 2004 for your reference.

I would appreciate a response so that I know that my complaint has been received and appropriate action is being taken. Subsequent to my visit on March 27, I visited Penn Yan again on April 20, and the interference was still present.

Thank you for your attention to this matter.

Sincerely,  
David Hallidy

I received NOTHING from the FCC after the original telephone call until May 10, 2004, when I received an email from Riley Hollingsworth of the FCC's Enforcement Branch, asking me to sign and date my complaint and fax it back to him- which I did. His email is copied here:

Please sign and date your complaint and either fax to me at 717-338-2574, or mail to my attention at FCC Enforcement, 1270 Fairfield Road, Gettysburg, PA 17325. Please include your address and telephone number and provide as much detail as practical. If you want to scan the signed complaint and e mail it to me, that would be fine too. Thank you.  
Riley Hollingsworth

#### **DETAILS OF COMPLAINT BY WILLIAM ROGERS- APRIL 19, 2004**

In the interim, I again visited Penn Yan (on April 20, 2004) and encountered the same interference as outlined in my first complaint- I did not lodge another complaint at that time, because other amateurs had also visited the city, experienced the same interference, and lodged their own complaints. Copied here is the complaint of William Rogers K2TER, and the response, from James Burtle of the FCC via email:

-----Original Message-----

**From:** James Burtle [mailto:James.Burtle@fcc.gov]  
**Sent:** Wednesday, May 05, 2004 10:50 AM  
**To:** William Rogers  
**Subject:** RE: Penn Yan BPL Complaint

Mr. Rogers,

Thank you for your e-mail. Before sending your complaints to the FCC, please send your complaints to the system operator to give him/her an opportunity to fix the problem. We will note your complaint, but plan to take no action at this time.

Sincerely,

Jim Burtle

-----Original Message-----

**From:** William Rogers [mailto:brogers@rochester.rr.com]  
**Sent:** Tuesday, April 27, 2004 6:54 PM  
**To:** James Burtle  
**Subject:** Penn Yan BPL Complaint

My name is William S. Rogers  
My address is: 104 Judson Street, Webster, NY 14580  
My telephone number is: (585) 265-1211

With this email, I am registering an official complaint of interference to the operation of my mobile Amateur Radio Station. My FCC-issued callsign is: K2TER, Amateur Advanced Class.

On April 19, 2004 I was parked in a P&C Food Market parking lot, 321 Liberty Street in Penn Yan, New York and attempting to operate on frequencies in the 10 meter Amateur band. I encountered extremely high levels of noise across the CW and SSB portion of the band, upon further investigation, I found strong carriers with signs of modulation covering the entire spectrum with no gaps from below 27MHz to 30.7MHz. The interference was constant. I was using a based loaded vertical antenna on my car and operating my Kenwood TS690 transceiver at the time. The levels of interference I observed when in FM mode were greater than +60dB over S9. This is the limit of indication on my S-meter. The interference subsided as I drove away from this area so I do not think it was an internal problem with my radio.

I think you would agree that this type of interference needs to be identified and eradicated before it causes interruption of a vital communications service, putting life and/or property at risk.

Thank you, in advance, for your timely attention to this matter.

Sincerely,  
William S. Rogers  
FCC-issued callsign: K2TER  
email address: [k2ter@rochester.rr.com](mailto:k2ter@rochester.rr.com)

### **DETAILS OF THIRD VISIT- MAY 22, 2004**

On May 22, 2004 I again visited the City of Penn Yan, after being informed by the BPL provider that they had taken steps to remove any interference. I discovered that while they HAD changed the character of the interference, they had in no way removed it. My second complaint to the FCC is included here. It clearly shows that an attempt was made to "notch out" the ham bands, but that this effort was mediocre, at best:

Date of Complaint: May 24, 2004  
Name: David Hallidy  
Address: 1027 Rousseau Drive, Webster, NY 14580  
Telephone Number: (585) 872-0942  
FCC-licensed Amateur Radio operator, Callsign: K2DH  
Date of interference: May 22, 2004

With this document, I am lodging my second formal complaint of interference to my Amateur Radio operations, caused by interference generated from a Broadband over Power Line (BPL) system being tested in the city of Penn Yan, New York.

### **BACKGROUND**

On March 28, 2004 I lodged my first complaint of interference caused by this system. When I made that complaint, I was informed that "the response time will never exceed 20 days" (FCC autoresponse dated 3/29/04 at 0845AM), "Reports of violations within the Amateur (Ham)

Radio Service may be made by email at: [fccham@fcc.gov](mailto:fccham@fcc.gov)... This includes that from BPL" (response from representative number TSR41, dated 3/30/04 at 0258PM), "Please sign and date your complaint and either fax to me at 717-338-2574... Thank you. Riley Hollingsworth" (email from R. Hollingsworth dated 5/10/04 at 1058AM). I have appropriately responded to these emails, but to date there has been no attempt to contact me or, as this complaint will show, nor any resolution to the interference problem in Penn Yan caused by the Amperion/DVI BPL trial being conducted there. The text of my first complaint is attached at the end of this document for your reference.

At least one other Amateur has experienced the same interference when traveling in the city of Penn Yan- see the formal complaint lodged by William Rogers (K2TER) dated 4/21/04.

I had been informed, in conversations with Mr. Marc Burling (CEO of Data Ventures Inc, the BPL provider) that they had made extensive changes to the system there and had resolved the interference problems.

### **COMPLAINT**

When I arrived in Penn Yan, I proceeded to the BPL injection point (located near the P&C food store on Liberty St) to see if there was anything there. I found the following:

The BPL interference (the classic multiple carriers spaced just over 1kHz apart, accompanied by a "tick-tick-tick" and/or buzzing) was present beginning at 32.51 MHz at a level of "S-9" and continued without a break to 35.10 MHz, where it then dropped quickly to just above the noise floor of my receiver. The other "leg" of this segment appears to pick up at 36.10 MHz and runs without a break to 39.40 MHz at the "S-9" level. There are low-level "residual" carriers detectable throughout the spectrum from below 32 to above 40 MHz.

Moving away from the injection point, I proceeded North on Liberty St, just about to Court St (the northern end of the test area). I could still easily hear the 32 to 39 MHz signals- they were still above "S-7" on my Yaesu FT-100D. But, I had moved to where I thought the next segment began (I was sitting under the line at what I guessed to be a repeater/extractor) and found the next segment as follows:

The same type of interference that I heard at the first location was present beginning at 22.20 MHz at levels above "S-9" (actually closer to S-9+20dB) and continuing without a break to 24.910 MHz. The signal quickly dropped down to just above the noise (but never disappeared completely inside the 12m band) and resumed at full strength at 25.04 MHz up to 25.92 MHz. This is only one half of this segment, so I continued looking for the other portion. I found it at 17.36 MHz, continuing without a break to 21.10 MHz. There was full-strength BPL in the 17m band (18.068- 18.168 MHz), and the interference didn't end before the beginning of the 15m band- the lower 100kHz of the band is wiped out by the BPL. Residual carriers could be detected in the 15m band up to around 21.16 MHz. The signals in the 17m band never dropped below "S-9+20dB", and were the same at the low end of 15m.

I traveled North on Liberty St to determine how far away from the end of the test zone I could still detect the interference. In my first report, I stated that I was 1.5 miles north of the Court St end of the zone and it was still detectable. This time, the range was a bit less. I had "S-2" to "S-5" signal levels at 0.8 miles from the end of the trial area. They might have been detectable farther north, but the general level of ambient noise seemed higher than on my first visit,

and may have contributed to the apparent reduction in propagation. Moving East from the trial zone, I was still able to detect BPL at "S-2 to S-5" levels at distances greater than 0.5 miles from the lines.

Signals which were present in the entire 17 meter and the lower portion of the 15 meter band on my arrival in Penn Yan were not readable through the noise generated by the BPL system.

I have included, as attachments to this document, excerpts from the appropriate portions of the FCC Rules, parts 5 and 15 for reference.

So, what I concluded from this visit is the following:

DVI (the provider) has made an attempt to reduce the interference to the Amateur spectrum in Penn Yan. They have been partially successful.

- 1) The 10m band (28.00-29.70 MHz) is clear of any BPL (it was completely covered with BPL during my first visit).
- 2) An attempt has been made to notch out BPL from the 15m band (21.00-21.45 MHz).
- 3) An attempt has been made to notch out BPL from the 12m band (24.890-24.990 MHz).
- 4) No attempt has been made to remove BPL from the 17m band. The 17m band (18.068-18.168 MHz) is completely covered up with strong BPL (as it was on my first visit).
- 5) The 15m band is only partially cleared of BPL. The lower 100kHz of the 15m band is completely covered up with strong BPL (the entire 15m band was covered up during my first visit), and residual carriers exist up to about 21.16 MHz.
- 6) The 12m band is only partially cleared of BPL. The lower 20kHz of the 12m band is completely covered up with strong BPL (the entire 12m band was covered during my first visit). In addition, the notch in the 12m band is rather ineffective- the residual signals never disappear.

The equipment on which I observed this interference was the following: A Yaesu FT-100D transceiver, which has now had it's "S" meter calibrated and shows "S-9" with 48uV of RF into the antenna port at 24.9 MHz. It varies by a few microvolts around this value across the spectrum from 14 to 50 MHz. Most measurements were made in the AM detection mode, with a 6kHz IF filter in place- the SSB and FM modes were used for comparison. AGC cannot be disabled on this receiver. My Tarheel M200A screwdriver antenna for measurements at or below 30 MHz- the antenna was resonated for each frequency monitored. A PAR 6m Omni-Angle horizontally polarized mobile antenna for measurements made near 50 MHz. A base-loaded vertical whip antenna (magnetically mounted and resonated at 35MHz) on the roof of the vehicle for measurements made in the 30-40MHz range.

#### **REQUESTED ACTION BY THE FCC**

I formally request that the FCC order the BPL system in the city of Penn Yan, NY shut down until the interference generated by this system can be eliminated. My operations there, and the operations of other Amateurs are severely affected by the interference generated by the BPL system in Penn Yan. I am further concerned that no action has evidently been taken with respect to my first complaint of interference in this case. I note that during a web search, I discovered that there are licensed commercial/emergency services users of the spectrum above 30 MHz in Penn Yan whose operations may be in jeopardy due to the level of interference.

I would appreciate a response to this complaint.

Respectfully submitted May 24, 2004,  
David V. Hallidy  
FCC-authorized Amateur Extra Class licensee: K2DH  
Email address: k2dh@frontiernet.net

It should be noted that although my request for a response was specific, as of the date of this filing I have received no acknowledgement from the FCC that the complaint was ever received, other than a "read receipt" sent to me by the mail system and shown here:

(To Stillwell)

Your message

To: James Burtle; Marc J. Burling; Ed W1RFI Hare; Anh Wride;  
Riley Hollingsworth; Alan Stillwell  
Subject: Second Complaint- BPL Interference in Penn Yan, NY  
Sent: Mon, 24 May 2004 15:42:42 -0400

was read on Mon, 24 May 2004 15:43:01 -0400

(To Hollingsworth)

Your message

To: James Burtle; Marc J. Burling; Ed W1RFI Hare; Anh Wride;  
Riley Hollingsworth; Alan Stillwell  
Subject: Second Complaint- BPL Interference in Penn Yan, NY  
Sent: Mon, 24 May 2004 15:42:42 -0400

was read on Mon, 24 May 2004 15:45:48 -0400

(To Burtle)

Your message

To: James Burtle; Marc J. Burling; Ed W1RFI Hare; Anh Wride;  
Riley Hollingsworth; Alan Stillwell  
Subject: Second Complaint- BPL Interference in Penn Yan, NY  
Sent: Mon, 24 May 2004 15:42:42 -0400

was read on Mon, 24 May 2004 15:56:46 -0400

It can clearly be seen from this reply comment that severe interference has been encountered from a BPL system being tested in the city of Penn Yan, NY, and it has been reported by at least two amateurs, using average equipment. Yet, the proponents of BPL continue to insist that there is no interference, or what small levels there may be, have been effectively mitigated by frequency notching and power reduction. On at least four separate occasions: March 27, April 19, April 20, and May 22, 2004 severe interference to the Amateur Radio Service was noted in the area of the BPL trial in Penn Yan. It should also be noted that the interference was not confined to just the area in the immediate vicinity of the power lines carrying the BPL signals- observations of moderate to severe interference were made as far as 1.5 miles away from the trial area.

Of great concern to me is the lack of responsiveness of the FCC with regard to these complaints. It is obvious from the record of correspondence I have provided that no claim of "we never received your complaint" can be made. Instead, it would appear that

the FCC is either passively “pidgeonholing” BPL interference complaints, or in at least one instance shown here, has taken the position that no action is warranted.

I request that the FCC perform it’s duty- publicly acknowledge that there have been PLENTY of complaints by licensed users of the HF spectrum with regard to BPL interference, and act upon those complaints to solve the problem. Hiding the truth will not make the problem go away.

Respectfully submitted,

David V. Hallidy  
Amateur Callsign: K2DH